

### **Abstract**

5 The present invention describes a process for the preparation of ethyldimethylamine and triethylamine with the following steps:

- 10 (i) reaction of a mixture of diethylamine and dimethylamine with ethylene in the presence of a catalyst from the group of alkali metal dimethylamides, alkali metal diethylamides and alkali metal hydrides
- (ii) removal of the catalyst
- 15 (iii) distillation separation of the resulting mixture in triethylamine and ethyldimethylamine and optionally diethylamine and dimethylamine
- (iv) optional return of the catalyst and of the starting amines to the reaction.

20 The process according to the invention permits the coproduction of ethyldimethylamine and diethylamine in a simple process.